SAFETY DATA SHEET
BARIUM SULFATE
REVISION 4, DATE 01 JAN 2021

1. IDENTIFICATION

Product Name	**Barium Sulfate**
Other Names	Barium Sulphate DGR 200; BB 185; Natural High Purity Barium Sulphate; SABARI 02D; SABARI 10A; SABARI 10D
Uses	Surface coatings, plastic compounds, brake linings, rubber compounds, sound deadening, weighting material and filler.
Chemical Family	No Data Available
Chemical Formula	BaSO4
Chemical Name	Sulfuric acid, barium salt (1:1)
Product Description	The amount of respirable silica is less than 0.1% at 10 microns. Contains small quantities of Strontium, Iron, Aluminium and Calcium compounds. This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Suite 13A.03, Menara Summit Persiaran Kewajipan USJ1 47600 UEP Subang Jaya Selangor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Australia – Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
National Poison Centre	Malaysia	+60-4-6536-999
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) Not Scheduled

Globally Harmonised System

Hazard Classification NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Signal Word None

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

Hazard Classification NOT hazardous according to the criteria of Safe Work Australia under Model WHS Regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Barium sulfate	BaSO4	7727-43-7	80 - 100 %
Crystalline silica (Quartz)	SiO2	14808-60-7	<1 %
Silica (respirable)	SiO2	14808-60-7	<0.1 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed IF SWALLOWED: Rinse mouth with water, then give plenty of water to drink. Do NOT induce vomiting. Get medical advice/attention if you feel unwell. Never give anything by mouth to an unconscious person.

Eye IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.

Skin IF ON SKIN: Remove and isolate contaminated clothing and shoes. Flush skin with running water/shower. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse.

Inhaled IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical advice/attention. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.

Advice to Doctor Treat symptomatically.

Medical Conditions Aggravated by Exposure No information available.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out. *If a significant quantity of this product is involved in a fire, call the fire brigade.
Flammability Conditions	Non-combustible; Does not burn.
Extinguishing Media	If material is involved in a fire, use extinguishing media suited to burning materials.
Fire and Explosion Hazard	There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.
Hazardous Products of Combustion	No significant quantities of decomposition products are expected at temperatures normally achieved in a fire.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters protective clothing will provide thermal protection but provides only limited chemical protection.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. ELIMINATE all ignition sources (if dust clouds can occur). Do not touch or walk through spilled material - Slippery when spilt. Avoid accidents, clean up immediately! Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly (see SECTION 13). Consider vacuuming, if appropriate.
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas. Prevent dust cloud.
Decontamination	After spills, wash area preventing runoff from entering drains.
Environmental Precautionary Measures	Prevent spillage from entering drains or watercourses. If a significant quantity of material enters drains, advise emergency services.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Use personal protective equipment as required (see SECTION 8). If there is a significant chance that dusts are likely to build up in cleanup area, we recommend that you use a suitable dust mask.

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Avoid handling which leads to dust formation. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Avoid contact or contamination of product with incompatible materials (see SECTION 10).
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep containers tightly closed. Keep containers dry and away from water. Keep away from incompatible materials (see SECTION 10).
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	COMPONENT: Barium sulphate (CAS No. 7727-43-7): - Safe Work Australia Exposure Standard: TWA = 10 mg/m3 (This value is for inhalable dust containing no asbestos and <1% crystalline silica). - New Zealand Workplace Exposure Standard [Next review 2022]: TWA = 10 mg/m3.
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Protection Equipment	*No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems. - Respiratory protection: Wear respiratory protection if there is a significant chance that dusts are likely to build up in the area where this product is being used. Recommended: Use a suitable dust mask (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Wear suitable protective glasses or goggles. - Hand protection: Handle with gloves. Recommended: Wear suitable gloves (preferably elbow-length) when skin contact is likely. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Wear overalls. Suitable materials for protective clothing include cotton, rubber.
Special Hazards Precaustions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. *Advise laundry of nature of contamination when sending contaminated clothing to laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Powder
Odour	Odourless
Colour	White to yellow
pH	Neutral
Vapour Pressure	Nil at normal ambient temperatures (@ No Data Available)
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	1,580 °C
Freezing Point	No Data Available
Solubility	Insoluble in water
Specific Gravity	4.2 - 4.4
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available

Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	Nil at 100°C
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Non-combustible; Does not burn.
Reactions That Release Gases or Vapours	No significant quantities of decomposition products are expected at temperatures normally achieved in a fire.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	No information available.
Chemical Stability	This product is unlikely to react or decompose under normal storage conditions.
Conditions to Avoid	Avoid generating dust. Keep containers dry and away from water.
Materials to Avoid	Incompatible/reactive with strong acids.
Hazardous Decomposition Products	No significant quantities of decomposition products are expected at temperatures normally achieved in a fire.
Hazardous Polymerisation	This product will not undergo polymerisation reactions.

11. TOXICOLOGICAL INFORMATION

General Information	Information on possible routes of exposure: - Ingestion: Significant oral exposure is considered to be unlikely. This product is unlikely to cause any irritation problems in the short or long term. - Eye contact: This product is likely to be mechanically irritating. If exposure is minor or brief, no long term effects should result. However, if material is not removed promptly, scratches to surface of the eye may result, with long term consequences. - Skin contact: Available data indicates that this product is not harmful. It should present no hazards, and is unlikely to cause any discomfort, in normal use. - Inhalation: Available data indicates that this product is not harmful. Product is unlikely to cause any discomfort or irritation. Chronic effects: No data for health effects associated with long term exposure. *Carcinogen status: No significant ingredient is classified as carcinogenic by SWA/NTP/IARC. Silica dust, crystalline, in the form of quartz or cristobalite (CAS No. 14808-60-7) is classified by the IARC Monographs as "Carcinogenic to humans" (Group 1). Product contains <0.1% Silica (respirable).
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	This product is unlikely to adversely effect the environment. Salts, acids and bases are typically diluted and neutralised when released to the environment in small quantities.
Persistence/Degradability	No information available.
Mobility	No information available.
Environmental Fate	Prevent entry into drains and waterways.
Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	If possible, recycle product and containers. If this is not practical, send to a commercial waste disposal site. This material may be suitable for approved landfill.
Special Precautions for Land Fill	Containers should be emptied as completely as practical before disposal. Recycle containers wherever possible, after careful cleaning.

14. TRANSPORT INFORMATION

Land Transport (Australia)
ADG Code

Proper Shipping Name	Barium Sulfate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)
ADR Code

Proper Shipping Name	Barium Sulfate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (New Zealand)
NZS5433

Proper Shipping Name	Barium Sulfate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (United States of America)
US DOT

Proper Shipping Name	Barium Sulfate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport
IMDG Code

Proper Shipping Name	Barium Sulfate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport
IATA DGR

Proper Shipping Name	Barium Sulfate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

Comments	NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)
Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	Not Scheduled

Environmental Protection Authority (New Zealand)
Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	Not Hazardous

National/Regional Inventories

Australia (AIIC)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Listed
China (IECSC)	Listed
Europe (EINECS)	Listed
Europe (REACh)	Not Determined
Japan (ENCS/METI)	Listed
Korea (KECI)	Listed
Malaysia (List of Classified Substances)	Not Listed
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Listed
Taiwan (TCSI)	Listed
USA (TSCA)	Listed
Mexico (INSQ)	Listed

16. OTHER INFORMATION

Related Product Codes	BASULP1000, BASULP1001, BASULP1002, BASULP1003, BASULP1004, BASULP1005, BASULP1006, BASULP1007,

BASULP1008, BASULP1009, BASULP1010, BASULP1011, BASULP1012, BASULP1013, BASULP1014, BASULP1015, BASULP1016, BASULP1017, BASULP1018, BASULP1019, BASULP1020, BASULP1021, BASULP1022, BASULP1023, BASULP1050, BASULP1052, BASULP1300, BASULP1400, BASULP1510, BASULP1525, BASULP1550, BASULP1800, BASULP1850, BASULP1851, BASULP1858, BASULP2000, BASULP2500, BASULP2501, BASULP2600, BASULP2700, BASULP3000, BASULP3001, BASULP3002, BASULP5000, BASULP5100, BASULP5200, BASULP5400, BASULP5500, BASULP5600, BASULP5602, BASULP6100, BASULP6101, BASULP6102, BASULP6103, BASULP6104, BASULP6105, BASULP6106, BASULP6107, BASULP6108, BASULP6109, BASULP6110, BASULP6111, BASULP6200, BASULP6201, BASULP6202, BASULP6203, BASULP7000, BASULP7100, BASULP7120, BASULP7121, BASULP7125, BASULP7250, BASULP7330, BASULP7400, BASULP7401, BASULP7405, BASULP7410, BASULP7415, BASULP7420, BASULP7450, BASULP7470, BASULP7500, BASULP7510, BASULP7520, BASULP7550, BASULP7710, BASULP7725, BASULP7800, BASULP7850, BASULP7855, BASULP7900, BASULP7910, BASULP7940, BASULP7950, BASULP7955, BASULP7960, BASULP7965, BASULP8000, BASULP8100, BASULP8101, BASULP8110, BASULP8200, BASULP8500, BASULP8505, BASULP8506, BASULP9000, BASULP9300, BASULP9500, BASULP9600, BASULP9700

Revision 4

Revision Date 01 Jan 2021

Key/Legend

< Less Than
> Greater Than
AICS Australian Inventory of Chemical Substances
atm Atmosphere
CAS Chemical Abstracts Service (Registry Number)
cm^2 Square Centimetres
CO2 Carbon Dioxide
COD Chemical Oxygen Demand
deg C (°C) Degrees Celcius
EPA (New Zealand) Environmental Protection Authority of New Zealand
deg F (°F) Degrees Farenheit
g Grams
g/cm^3 Grams per Cubic Centimetre
g/l Grams per Litre
HSNO Hazardous Substance and New Organism
IDLH Immediately Dangerous to Life and Health
immiscible Liquids are insoluable in each other.
inHg Inch of Mercury
inH2O Inch of Water
K Kelvin
kg Kilogram
kg/m^3 Kilograms per Cubic Metre
lb Pound
LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.
ltr or **L** Litre
m^3 Cubic Metre
mbar Millibar
mg Milligram
mg/24H Milligrams per 24 Hours
mg/kg Milligrams per Kilogram
mg/m^3 Milligrams per Cubic Metre
Misc or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.
mm Millimetre
mmH2O Millimetres of Water
mPa.s Millipascals per Second
N/A Not Applicable
NIOSH National Institute for Occupational Safety and Health
NOHSC National Occupational Heath and Safety Commission
OECD Organisation for Economic Co-operation and Development
Oz Ounce
PEL Permissible Exposure Limit
Pa Pascal
ppb Parts per Billion
ppm Parts per Million
ppm/2h Parts per Million per 2 Hours
ppm/6h Parts per Million per 6 Hours

psi Pounds per Square Inch
R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight